

# Homework 76-FORM A

## Area & Perimeter Conversions

Name: \_\_\_\_\_

Period: \_\_\_\_\_ Date: \_\_\_\_\_

Failure to show all work and write in complete sentences will result in LaSalle!

1) A square and a semicircular region have the same perimeter. If the radius of the semicircular region is 8 cm, what is the length of one side of the square?

$$C = 2\pi r$$

$$= 2\pi 8$$

$$= 16\pi$$

$$P = 4s$$

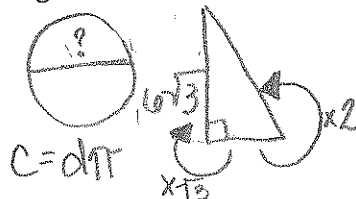
$$16\pi = 4s$$

$$s = 4\pi$$

Exact answer:

Approximate answer:

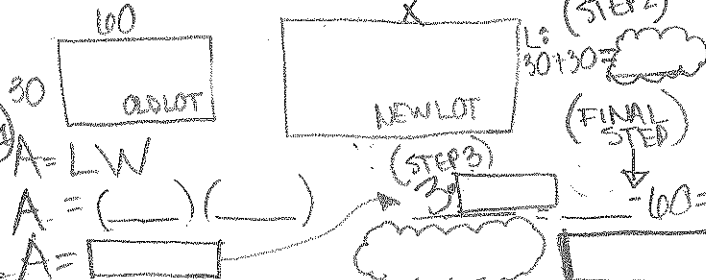
2) The diameter of a circle and the hypotenuse of a 30-60-90 triangle have the same length. What is the circumference of the circle if the length of the long leg is  $6\sqrt{3}$  inches?



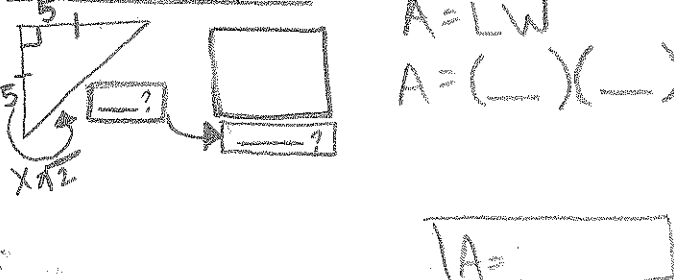
$$C = d\pi$$

$$C = 12\pi$$

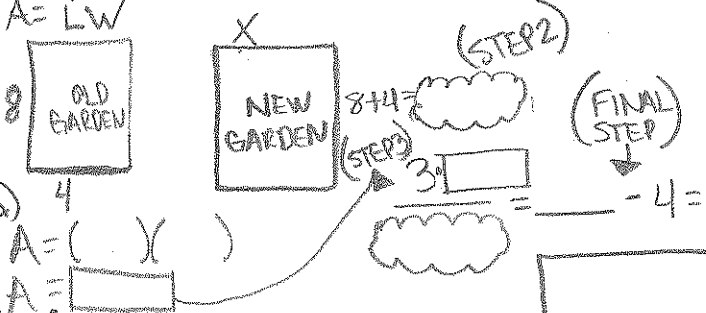
3) A farmer who owned a 30-yard-by-60-yard plot of land purchased more property such that the area tripled. The 30-yard length increased by 30 yards. How much must the width have increased?



4) The hypotenuse of an isosceles right triangle has the same length as one side of a square. The legs of the isosceles right triangle are each 5 meters. What is the area of the square?



5) An 8-foot-by-4-foot garden space is increased by 3 times. If the 8-foot side is increased by 4 feet, how many feet must the 4-foot side have been increased?



6) The circumference of a circle and the perimeter of an equilateral triangle are the same. If the diameter of the circle is 10 cm, what is the length of the side of the triangle?



Exact answer:

Approximate answer:

7) A square and a semicircular region have the same perimeter. If the perimeter of the square is 12 in, what is the length of the radius of the circle?

8) The diameter of a circle and the hypotenuse of an isosceles right triangle have the same length. If the length of one of the legs of the isosceles right triangle is 5 in, what is the circumference of the circle? Round to the nearest tenth.